Pattern of change in core muscles thickness during active straight leg raise test & prone hip extension test

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Background: Cross section thickness of core muscles (CM) muscles such as internal oblique (IO), external oblique (EO), transverse abdominis (TrA) and lumbar multifidus (LM) was strongly associated with low back pain. Active straight-leg raise test (ASLR) and prone hip extension (PHE) tests were commonly used as assessments in low back pain. This study aimed to investigate the changes in core muscle thickness during ASLR and PHE using real time ultrasonography (RTUS). This study was conducted to understand the clinical reasoning behind the contemporary practice of using ASLR and PHE test as clinical tests to assess lumbo pelvic stability.
Methods: A total of 33 healthy subjects (17 males and 16 females) were recruited from an orthopaedic department of University hospital. The subjects were instructed to lift their legs for about 20 cms from the bed while performing ASLR and PHE. The cross-section thicknesses of the LM and (IO, EO, and TA) were measured using RTUS during PHE and ASLR. The changes in CM thickness of the limb that performed ASLR & PHE were compared with the resting limb on the contra lateral side by paired t test.
Results: There were significant increase in the thickness of the CM (IO, EO and TA) on the limb that performed ASLR when compared with the resting limb on the contra lateral side ($p<0.05$).
Conclusion: The pattern of change in cross sectional thickness of CM indicated that IO,EO, TA increased in size significantly on the limb that was lifted during ASLR test. This finding supports that CM are involved during ASLR and explains the clinical reasoning for using ASLR test to assess lumbo pelvic stability.

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Prevalence of overweight and obesity in patients with knee osteoarthritis: A cross-sectional study

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Background and purpose: Previous studies reported inconsistent results concerning the association between Body Mass Index (BMI), Knee Osteoarthritis (OA) and other demographic risk factors. The objective of this study were: (1) to investigate the prevalence of overweight and obesity among patients with knee OA and (2) to examine the relationship between BMI and their socio-demographic factors such as age, gender and race among knee OA.
Methods: 140 OA knee subjects which comprised of all three races such as Malay, Chinese and Indian (114 female and 26 male) aged between 40-78 years with mean ± SD age of 58.7 ± 8.951, were recruited over a year from a government hospital. Subjects diagnosed with unilateral or bilateral knee OA, independent or required minimal aid in walking are included and those who underwent knee surgery are excluded. Data was collected using a health information questionnaire which consisted of demographic and anthropometric details. Descriptive and inferential statistics such as Chi-square tests were used to analyze the data.
Results: The results of the study showed the overall prevalence rates of overweight and obesity were 55.7% and 25.7% respectively among OA knee patients. Among OA knee patients, the prevalence of overweight (51.3%) and obesity (38.9%) with in BMI was higher among Malay females.
Conclusion: This study has showed that the prevalence of overweight and obesity was fairly high among OA knee population especially among Malay female patients. The implication of this study finding calls the health care providers to take appropriate health strategies to combat obesity and to prevent early OA knee in this population.

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The use of cues in simple sequential bimanual finger tapping task in normal population

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Background and purpose: External cues are used as an intervention strategy in rehabilitation of some neurological diseases, such as Parkinson's disease. Evidence from rhythmic external cues, such as a sound or lines on ground, has shown that it will improve functional performance or play a role as an external trigger to initiate movement. Visual mental imagery is the process of retrieving perceptual information from long-term memory and generating an intrinsic image without seeing the actual visual stimuli. Combining the two concepts, if the external cues can be raised intrinsically, this might be useful for clinical application. The current study aims to investigate the effectiveness of imaged cues in normal population, and the influence of aging on the cueing effect. Once we understand the effectiveness of external and imagined cues in normal population, and it can be further applied to patients. The aim of current study is to investigate the effectiveness of the internalization of external visual cues by a computerized bimanual finger tapping task in a young group and a normal elderly group.
Methods: The current study adopted a 2x3 mixed design (between-group factor: aging and within −group factor: cueing type). A total 54 normal subjects was recruited in this study, 34 in young adult group (M=21.38 years, SD=1.07) and 20 in aged group(M=65.1years, SD= 8.01). A tapping task with four varied sequences with three taps, was conducted under three different conditions, no cue, external visual cue and internal visual cue through mental imagery. Both of the groups performed the tapping movement under all three conditions. In the external cueing condition, subjects were required to perform each tapping according to a visual cue, whereas in the internal cueing condition, subjects were required to form a mental image of the visual cue which they saw in previous condition and made the tapping movement according to the mental image. The reaction time and accuracy were recorded and used for comparison among different condition within group and between groups. All subjects were assessed using two self-administrated questionnaires, including Vividness Visual Imagery Questionnaire and Self-rating vividness questionnaire, to evaluate their capacity of visual mental imagery. Two-way ANOVA was used to determine the effect between groups.
Results: The aged group demonstrated a significant longer reaction time in all three conditions compared to the young group, especially under the internal cue condition ($p<0.05$). Compared with no cue condition, higher accuracy rate was found under internal cued condition in both groups ($p<0.05$).
Conclusion: The performance of finger tapping task under varied cueing condition is affected by aging, and elderly demonstrates prolonged reaction time when compared to the young group. The imaged cueing strategy can improve accuracy in finger tapping tasks, and this is similar with external visual cueing condition. This mental visual imagery of specific cues might be beneficial for those who need some external cues to improve their performance. The internal cueing strategy may be an alternative strategy for external cueing, but this needs to further examine in patients populations.

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Complications influence ambulation in patients undergoing extrapleural pneumonectomy

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Background and purpose: There are few reports about ambulation of malignant mesothelioma patients undergoing extrapleural pneumonectomy (EPP), which is highly invasive. In this study we investigate the started-day of ambulation in several cases of EPP.
Methods: We retrospectively extracted seven patients aged 60.4 ± 8.2 years undergoing EPP between January and December 2011. Critical paths of respiratory resection in perioperative course were used. Patients performed respiratory muscle stretch, incentive spirometer and aerobic exercise, and learned the importance of rehabilitation to avoid complications. From the medical records we investigated perioperative factors, the presence or absence of respiratory and cardiovascular diseases and the start date of walking.
Results: Post-operative day (POD) at which the patients began to take a 30-meter walk was extended by the presence of cardiovascular and respiratory complications. After EPP, 4 patients (59.2 ± 10.9 years) with cardiovascular complications and 2 patients (67.5 ± 0.5 years) with respiratory complications began to take a 30-meter walk on POD 7.3 ± 3.0 and 5.0 ± 3.0, respectively. One patient (68 years) with both complications began to take a 30-meter walk on POD 8. Two patients without complication (58.5 ± 1.5 years) began to take a 30-meter walk on POD 4.0 ± 1.0.